USGS collaboration is a valued part of the WRRA nationally competitive research projects. For the Aquatic Invasive Species (AIS) and PFAS proposals, this collaboration is unfunded and depends on university primary investigators developing projects that can build on ongoing USGS monitoring, laboratory analysis, or something similar. For the ***104(g) General call***, there is an established practice of funding this USGS collaboration at an amount of up to $40,000 over the course of the project, depending on the availability of funds. ***For each type of collaboration, a letter of support from the supervisor or leadership of the USGS co-PI is required in order to ensure that the resources have been appropriately discussed, regardless of whether funding will be provided.***

Because the funding for 104-g General collaborations comes from USGS funds and is unrelated to those appropriated as part of WRRA, it is important that there be clear understanding of how these funds will be used. You must explain **who** from USGS will be involved, **what** they will be doing, and **how** it relates to the objectives and responsibilities described in the rest of the proposal. This explanation needs to be accompanied by **a simplified budget** that covers the same categories as that provided by the University PI. This explanation of the government involvement does NOT count toward the page limitation. One complete example is provided here, as well as an additional budget example that includes various types of USGS collaboration.

Government Involvement

One Example Explanation

A scientist from a USGS Science Center will serve as co-PI on this effort. The USGS scientist will have expertise and interest in linkages between Earth's internal climate modes and coastal hydrology in the northern Gulf of Mexico. The USGS scientist will oversee the tasks of

1. Compilation of historical USGS NWIS stream gaging data and State Department of Environmental Quality water quality data for major Lake tributaries going back several decades. These data will be synthesized to estimate total annual surface water P-loading to Lake.
2. Compilation of historical climate datasets such as ENSO time series and gridded precipitation and reanalysis climate data
3. Establishing linkages between climate variability and interannual P-loading to Lake with time series analyses and other statistical techniques.

The USGS scientist will provide oversight of these tasks, but they will ultimately be performed by the graduate student. To that end, the USGS scientist will engage with the graduate student and provide instruction in a two-semester individual independent study course, "Geophysical Data Analysis". This USGS/student interaction will provide an avenue for the student to acquire skills and experience relevant to addressing WRRA focus areas of "Water-Related Hazards and Climate Variability" and "Water Quality" (Donohue et al. 2021) and will expose and train the graduate student in aspects of water resource investigations that are relevant to the USGS Water Mission Area.

Additionally, the USGS scientist will participate in field sampling and laboratory analysis where relevant and necessary and will assist in assembly of manuscripts for peer-reviewed publication. The USGS will seek their own internal funds for this project (see below)

Item	Rate	Hours	Cost
Y1 USGS Salary	$76.82	80	$6,145.60
Y2 USGS Salary	$79.89	80	$6,391.20
Y3 USGS Salary	$83.09	80	$6,647.20
Field Travel			$500.00
Subtotal			$19,684.00
Overhead(21.171%)			$4,167.30
Total			$23,851.30

Unrelated example for multiple science centers, including field work and lab analyses:

Multiple USGS researchers will contribute to the proposed work in order to integrate sites at which previous and ongoing data collection can be supplemented to inform the modeling of sediment and nutrient movement from the field to stream. This combination of USGS contributions are included in the $40,000 budget for collaboration. Staff costs include center overhead.

Recently funded work (grant #s) will provide laboratory data and analyses for streambed, streambank, and storm events for Watersheds 1 & 2. For the proposed work, USGS staff will sample 2 events at each location. Event sampling will include a team to collect 5-gallon buckets at 5 points along the hydrograph to provide contemporaneous data for water isotopes, fall-out radionuclides, and sediment fingerprinting to complement the normal sediment and nutrient data collected at this site. Beyond this additional required fieldwork and sample management, funds are requested for publishing these supplemental data that will not be populated in the National Water Dashboard. Co-PIs 1 & 2 will oversee sampling at Watersheds 1 & 2. Funds (80 hrs) are requested for USGS co-PI1 to run the sediment fingerprinting analysis of the storm samples using SedSAT (Gorman Sanisaca and others, 2017). Co-PI3 will integrate these data into a model of landscape connectivity.

For each watershed, field work will be done during year 1, with data analysis and preparation for data release done in years 2-3. The modeling will be integrated in each year of the project, with most of that effort in years 2-3. These estimates include Science Center overhead.

USGS Staff	Activity	Cost = $39,965
GS7-14, Science Center 1 staff	Watershed 1: field work, data release, analysis	$15,000 [140 hr]
GS7,11, Science Center 2 staff	Watershed 2: data release, analysis	$11,000 [140 hrs]
GS2-12, Science Center 3 staff	Landscape connectivity modeling	$13,000 [140 hrs]
Travel	Watershed 1: 100 miles	$65
Lab Analyses – Method 17 at Central Region Minerals Lab	Watershed 1 (9), Watershed 2 (9), QA (2)	$400 ($20 each)